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New Plants from Wyoming. VII

BY AVEN NELSON

For the past several years I have been observing the species of *Paronychia* with some care, and a large series of specimens have been secured to illustrate those credited to this region. Among those secured are authentic specimens of *Paronychia depressa* (T. & G.) Nutt. That Nuttall's plant deserves specific rank I think can hardly be questioned by one familiar with it in the field. Nuttall, in selecting the name *depressa*, must have fully understood its habit, but it seems that no one since has appreciated the appropriateness of the name. The descriptions of it that are current are all misleading. Height is assigned to the stems but they are absolutely prostrate-spreading, forming close mats upon the surface of the ground, a fact that herbarium specimens fail to show. This will at once separate it from that species with which it has been associated, though they are also otherwise very different. To place it on record a little more fully than has heretofore been done the following characters may be noted :

Prostrate-spreading, forming close mats, the very numerous dichotomous stems springing in a cluster from the summit of a woody root, all but the herbaceous portion buried in the loose soil, silvery, this appearance due to the large scarious stipules and the short, silvery, scabrous pubescence : leaves linear, exceeding the internodes, cuspidate or mostly bristle pointed, the lanceolate stipules more conspicuous than the leaves (which they nearly equal) and with them closely clothing the short stems : flowers singly in the axils or in small cymes, nearly sessile, surpassed by the subtending leaves and bracts : sepals with a cone-shaped tip half as long as the rest of the sepal, awn about equaling the tip, at the base of which the arch at the inner face is borne : filaments very short, exceeded by the slender staminodia.

This I have secured but once and I am sure it is not common. My no. 461 has been compared with the type in Torrey Herb. at Columbia, by Dr. Rydberg, who says it is a very close duplicate of Nuttall's specimen.

Of frequent occurrence in Wyoming is *Paronychia sessiliflora*

Nutt. but of this there are two or three forms, one of which seems sufficiently well marked to be constituted a variety.

Paronychia sessiliflora brevicuspis

Smaller than the species, more closely matted, the leaves shorter, the lower ones obtuse: the herbaceous part of the branches very short: flowers in numerous small cymes, clustered at the ends of the branches, nearly immersed in the leaves: calyx about 2 mm. long, with a swollen turbinate base: sepals closely valvate, forming a short cylindrical tube closed at the summit by their arched tips, the tip and awn very short.

Not plentiful, but occurring occasionally on open, stony ridges in the hills. No. 349, Laramie Hills, July 7, 1894, well represents this variety.

Paronychia Jamesii T. & G. has sometimes been reported from this range, but it seems probable that most of the specimens so-called belong rather to the following species.

Paronychia diffusa

Allied to *P. Jamesii* but wholly prostrate-spreading: the woody root vertical, the numerous branched stems crowded on its crown: stems widely spreading, their perennial portion buried in the soil, the herbaceous portion short, very leafy: leaves equaling or exceeding the internodes, narrowly linear, mostly acute and mucronate: stipules silvery, lanceolate, shorter than the leaves: inflorescence contracted, the numerous small cymes congested at the ends of the short, brittle stems: flowers nearly sessile, exceeding the bracts and most of the leaves: sepals minutely puberulent as are also the leaves and stem, the short turbinate base of the calyx minutely hirsute: cusps short, arched within: filaments short, exceeding the staminodia.

This is the commonest species in this genus in this range. The following numbers well represent it: 451, 1331, 2103 and 2769.

Besides the foregoing *P. pulvinata* Gray occurs on some of the Alpine summits in our mountains.

Draba surculifera

Perennial, root short, bearing on its crown a few to several erect, simple stems and some short leafy stolons: stems slender, strict, 2-3 dm. high, pubescent with scattering, simple hairs and a closer branched puberulence: leaves of the crowns and the stolons

crowded, oblanceolate, short-petioled or nearly sessile, 3–5 cm. long, 5–10 mm. broad, cinereous with a close stellate pubescence or glabrate : upper stem leaves ovate or broadly lanceolate, acuminate, sessile by a broad or partly clasping base, sub-glabrous, downward gradually passing into the basal leaves : fruiting raceme constituting $\frac{1}{3}$ – $\frac{1}{2}$ of the whole length of the stem, naked above, the lower pods in the axils of the upper leaves : flowers yellow, rather small : sepals glabrous or nearly so, ovate : petals obovate, narrowed into a slender claw, nearly twice as long as the sepals : filaments exceeding the sepals, rather stout, anthers small : pod lanceolate, 8–12 mm. long, finely pubescent, usually flat but occasionally twisted : style rather thick, about 1 mm. long : pedicels slightly shorter than the pod : seeds 16–20.

This species may possibly be found in some of the herbaria as one of the forms of the Rocky Mountain aggregate that has been called *D. aurea* Vahl. The true *D. aurea*, if figures and descriptions may be relied upon, has a single stem, corymbosely branched above : *D. surculifera* has several unbranched stems and some short, stoloniferous shoots. Of the several species recently published by Dr. Greene, only two are closely allied to this, viz. *D. Neo-Mexicana* (Pittonia, 4 : 18) which is separated by its stellate-pubescent calyx, its glabrous, elliptical pods and its long style and probably other characters that would appear were that before me : *D. spectabilis*, which is separated from this by its showy flowers and differences of fruit. In some respects, *D. Herleriana* resembles this but its branching stems and narrow twisted pods make it impossible to unite the two.

Type specimen no. 5125, La Plata Mines, Medicine Bow Mts., by Mr. Elias Nelson.

Lesquerella condensata

Perennial, the several branches of the caudex very short and crowded (in loose, sandy soil more open and sheathed by the dead leaf bases), the whole plant both in flower and fruit forming a small, dense, sub-globose tuft, 3–8 cm. in diameter, finely and densely stellate-pubescent throughout : leaves greatly crowded on the crowns, linear or narrowly oblanceolate, 1–4 cm. long : inflorescence a short, corymbose raceme, about equaling (rarely exceeding) the leaves : petals broadly spatulate or with an elliptic blade, 6–7 mm. long, about half exceeding the sepals, the claw broad and margined : filaments slender, equaling the sepals, slightly enlarged at base : pod ovate, compressed at summit, 5

mm. long, about equaling the slender style : ovules two in each cell, usually only one maturing ; septum generally perforated by a narrow slit.

Probably most nearly allied to *L. alpina* (Nutt.) S. Wats. which seems to be a very rare plant. From this its compact, tufted, stemless habit separates it, as does also its smaller flowers and short racemes and few-seeded pod.

This is one of the first plants to come into blossom on the Laramie Plains, its bright yellow showing on some of the naked, rocky slopes of the foothills in mid April. It seems to occur in similar situations throughout the southern part of the state. Collected a number of times and, on the determination of others, distributed as *Draba glacialis* Adams., a most unaccountable error. Some of our collection numbers of it are 62, 1218, 3071, 4324 and 4797, the latter number unusually large in every way.

Cerastium Buffumae

Perennial (?), stems densely clustered on the crown of a slender root, closely leafy-matted and spreading, light or yellowish green : the numerous stems spreading or ascending, 7-15 cm. long, minutely glandular-pubescent, the internodes gradually longer upwards and less conspicuously leafy : leaves small, very numerous below, oblong to elliptic, sessile or tapering to a broad, petiole-like base, 5-12 mm. long : inflorescence strict and fascicled, the lower pedicels elongated : pedicels and calyx closely glandular-puberulent : sepals green, barely scarious margined at the tip, oblong, obtusish, 4-5 mm. long : petals one half exceeding the sepals (more or less), bifid : stamens ten : styles five : capsules when mature about twice as long as the sepals : seeds brown when mature, closely but minutely papillate.

In 1892 an extensive collection, mostly of grasses, was made by Professor B. C. Buffum for this University. Mrs. Buffum who accompanied the expedition collected most assiduously in other groups. Among the good things she secured was an abundant supply of this fine species from some locality in the Big Horn Mountains, the exact place not now known. It is with pleasure that I dedicate this species to its discoverer. Type specimen in Herbarium University of Wyoming.

Thermopsis annulocarpa

Perennial from horizontal rootstocks, silvery pubescent throughout with short, soft, appressed hairs : stems single, or two (possibly

more) from the crown of each rhizome, 3-4 dm. high, simple below, branched above, the branches slender, leafy, barren, exceeding the single mature raceme: leaves elliptic, oblong or broadly oblanceolate, mostly obtuse, 3-5 cm. long; stipules broadly ovate or rhombic below, narrower upward, the upper oblong, 2-3 cm. long; petioles about as long as the stipules: raceme strictly terminal on the main axis: calyx-tube campanulate, somewhat nerved at the base, 5 mm. long, the lobes shorter: corolla unknown: mature pods pubescent, 12-15 cm. long, about 7 mm. broad, circularly curved, usually forming a complete ring or the apex even overlapping the base: seeds 7-10; the ovules somewhat more numerous.

That it should be necessary to establish a third species in this genus, from this state within a year, is a little singular but this plant differs so radically that it can not be disposed of satisfactorily in any other manner. In habit and pubescence it suggests *T. argentata* Greene but in fruit character it is nearer *T. rhombifolia* Rich. though its circularly curved pod makes it distinct enough from that. Then too the habitat of this is exceptional. While not strictly alpine yet it is more than sub-alpine. It was secured in the Ferris Mountains, among the rocks on the naked slopes near their summits, at an altitude of fully 10,000 feet.

Type no. 4971, by Mr. Elias Nelson, July 25, 1898.

Anogra rhizomata

Perennial: rhizome horizontal, long, semi-woody, moderately thick, giving rise at intervals to short, obliquely ascending branches: stems several, from the crowns of the branches of the rhizome, divaricate-ascending, 1-2 dm. long, from pinkish to light violet, puberulent: leaves from nearly entire to deeply pinnatifid, linear-oblong in outline, the lower somewhat petioled, 3-5 cm. long, more or less hispid-ciliate and puberulent: flowers axillary, congested at the summit of the stems; buds acute at apex, sometimes glabrate: calyx tips free, lobes shorter than the petals, usually much shorter than the tube, throat not villous: petals white or pink, sub-orbicular: capsule linear, somewhat angled, scarcely tapering to the apex, 2-3 cm. long, divergent or becoming deflexed.

This and *A. albicaulis* resemble each other greatly in general aspect but the remarkable rhizome of the one is to be contrasted with the slender, vertical taproot of the other. The obtuse buds and small, tapering capsule of the larger plant is to

be contrasted with the acute buds and long, prismatic-cylindrical capsules of the smaller, perennial plant.

Cymopterus bulbosus

Root large, clavate, increasing in diameter downward, the end usually bulbous, 10–15 cm. long, 2–4 cm. in diameter in thickest part : caudex very short, covered with the bases of the petioles of dead leaves : leaves 1 or more from the caudex and several on the stems (the former long petioled), glaucous, bipinnate, ovate in outline, 4–7 cm. long ; the pinnae also ovate, pinnatifid or toothed, the ultimate segments oblong to ovate, 3–8 mm. long ; petioles with expanded membranous base : stems 1–2 from the crown, slender, 3–5 cm. long, giving rise at their summits to several leaves and peduncles : peduncles moderately stout, at maturity 5–10 cm. long and equaling or exceeding the leaves : involucre and involucels of broad membranous bracts with broad greenish midrib, more or less united at base : rays unequal, 8–15 mm. long, those of the aborted umbellets very short ; pedicels 5–8 mm. long : fruit elliptic to oval, 8–14 mm. long, 6–10 mm. wide ; wings broad and thin, equaling or narrower than the seed body, the dorsal or the two intermediates occasionally not developed : oil tubes mostly 3 in the intervals and 6 on the face, the two middle ones situated near the inner side of the integument : seed face concave.

That this species may exist in the herbaria as *C. montanus* Nutt., is possible but no two related species are more easily discriminated. In *C. montanus* the peduncles are very short, shorter than the leaves in both flower and fruit ; the leaf segments are rather distant while in *C. bulbosus* the segments are crowded. The large bulbous termination of the root will further distinguish the latter as do also the thin integument and thin wings (which are scarcely thickened at the base) in contrast with the conspicuously thickened integument and base of the wings of the other. If more points are needed the habitat is also discriminative. *C. montanus* is of the open plains of the Rocky Mountain region in general while the other seems to be confined to naked, clay soil, such as occurs in the ravines and slopes among the Green River shales. Type specimen in Herb. University of Wyoming, no.

4709, June 14, 1898. Also collected in 1897 at Point of Rocks no. 3085.

Pentstemon Utahensis (Wats.)

P. glaber Utahensis Wats. Bot. King, 217.

Dr. Watson placed this as a variety because there were seemingly intermediate forms connecting this with related species. The several authentic specimens of it at hand from various parts of the Rocky Mountains show certainly as much constancy in characters as any of the recognized species. Its tall, strict stems, with long internodes and erect, relatively narrow leaves; its rather crowded, long petioled basal leaves, and its greatly elongated inflorescence puts it in sharp contrast to *P. glaber* Pursh.

Of the more recent collections that well illustrate its characters are Baker, Earle and Tracy's specimens from Mancos, Colo., no. 405 and the writer's nos. 1093, 1559 and 4102, from various parts of Wyoming.

Phacelia campestris

Annual, minutely pubescent, scarcely glandular, branched from the base, the 2-6 main branches decumbently divaricate at base, these more or less branched and with ascending tips, main branches 8-12 cm. long: leaves oblong in outline, 1.5-3 cm. long (including the short petiole), deeply pinnatifid, the 3-5 pairs of segments oblong, obtuse, entire; the terminal lobe usually three-toothed: raceme simple, at first short and crowded, later open, the few flowers (6-12) rather uniformly distributed on the 4-7 cm. long rachis: pedicels very short: sepals oblong or narrowly spatulate, minutely hispid on the margins, in anthesis a third longer than the corolla, lengthening slightly in fruit: corolla white, 2-3 mm. long, short tubular, the rounded lobes $\frac{2}{5}$ of its whole length, appendages very narrow: filaments dilated downward, about the length of the corolla-tube, subequal: style equaling or shorter than the ovary, much shorter than the mature capsule, divided one half its length: capsule finely pubescent, oblong, obtuse, 3-4 mm. long, a little shorter than the sepals: seeds 10-14, elliptic, compressed, transversely ridged.

To be compared with *P. Ivesiana* Torr. from which it differs in being much less glandular, in having a corolla shorter than the calyx, nearly equal stamens and fewer seeds.

It was secured on the open plains, in loose sandy soil about the roots of sage-brush, near Granger, June 14, 1898, no. 4696.

Lappula cenchrusoides

Annual, rather intricately bushy-branched, 2-4 cm. high: stems and branches rather slender: pubescence moderately harsh, rather minute, that of the stems of short, appressed, whitish hairs with inconspicuous pustulate bases,—of the leaves somewhat similar, scanty on the upper face, denser below with inordinately large pustulate bases: leaves numerous, small, oblong to ovate, 1-2 cm. long: flowers in leafy-bracted spikes, very minute: the lobes of the corolla obtuse, suborbicular, slightly shorter than the tube which about equals the calyx: nutlets large, ovate-acute, nearly sessile, not deflexed, minutely papillose-tuberculate on the back, the larger of the tubercles in a median row, armed on the margins with a double row of bristles; bristles glochidiate-barbed at the apex only, somewhat unequal, mostly distinct to the base.

This was found in considerable abundance in a dry cañon, among the rocks, mostly in clumps. The very abundant sandbur-like fruits at once attracted attention and closer examination shows many points of difference between this and *L. Texana* (Scheele) Britt. which is so abundant in this range.

Type specimen in Herb. University of Wyoming, no. 5339, Laramie Hills, September 14, 1898.

Mertensia foliosa

Rootstock vertical, short, thick, covered with dead brown bark, usually branched at summit, the 1-several crowns clothed with the bases of dead petioles: roots slender, fibrous, intermingled with a few large woody ones: stems 1 or more from each crown, simple, ascending or erect, striate, glabrous or minutely pruinose, 2-3 dm. high, leaves thick, ample, glabrous, minutely scabrous on the margins: radical leaves numerous, elliptic to oblong, 4-7 cm. long, slender petioles once or twice as long: cauline crowded, sessile, oblanceolate or (upwardly) lanceolate and acute: the foliar bracts lanceolate: panicle rather crowded, the lower peduncles but little elongated: corolla rather large, about 15 mm. long, the tube slightly exceeding the limb, about twice the length of the lanceolate sepals; the crests in the throat between the bases of the filaments conspicuous, a 10-toothed ring at the base of the tube, glabrous throughout: filaments as broad or broader than the anthers: anthers (in all specimens examined) exerted *i. e.*, outside of the tube.

Recently distributed under no. 2951 as *M. oblongifolia* which it is far from being. It is the prevailing species in southwest

Wyoming on the sage-brush slopes in the foothills. The dense, leafy clumps are both numerous and conspicuous. Observed and collected in several localities, but the before mentioned number from Evanston, May 28, 1897, is designated as typical.

Mertensia viridis

M. lanceolata viridis Aven Nelson, First Rep. Fl. of Wyo. 158.

Rootstocks woody, creeping in the crevices among the rocks; the crowns sheathed by the dead petioles: stems one or more from each crown, glabrous or sparsely hispidulous, decumbent at base, slender and rather weak, 2-4 dm. long: leaves bright green, glabrous below, minutely hispidulous above: radical numerous, 4-6 cm. long, from oblong to elliptic, on slender petioles about twice as long as the blade: cauline oblong, becoming smaller and acutish upward: panicle leafy bracteate, many-flowered: peduncles and pedicels slender, the former surpassing the foliose bracts: corolla about 1 cm. long, the tube exceeding the limb and about twice the length of the sepals: filaments narrower than the anthers.

Since the publication of this plant as a variety of *M. lanceolata* DC. it has been collected once more, this time near Dome Lake at the summit of the Big Horn mountains, no. 2430. These latter plants show that it is a good species. It is strictly alpine. The original collection is no. 1608, Laramie Peak, 1895.

Lithospermum asperum

Perennial: root large, woody, deep-set, the dark bark exfoliating in thin flakes: caudex rather numerously and slender branched, dark brown with scale-like leaves and exfoliating bark: herbaceous stems numerous, slender, rather brittle, simple or branched, 15-25 cm. long, hirsute, the short whitish hairs divaricate: leaves rather numerous, from oblong to linear, the broader tapering to a narrow base, all sessile or nearly so, 2-4 cm. long, rough hirsute, rather sparsely so, especially on the upper surface, the hairs short, tapering from a pustulate base: flowers on short, very hispid pedicels, axillary: sepals linear, about 5 mm. long: corolla yellow, tube long, 2-3 cm., lobes oval, crenulate-erose, about $\frac{1}{4}$ as long as the tube, crests rather small: stamens inserted about $\frac{1}{6}$ the length of the tube below the throat: nutlets as in section *Batschia* Endl., not impressed-punctate (if at all sparingly and minutely so on the ventral side only).

Having but one collection of this I am unable to state whether it produces more than one form of flowers or not. Since mature

nutlets were secured on the same plants with the conspicuous flowers it seems probable that no cleistogamous ones are produced. That dimorphism, as to the insertion of stamens, probably exists here as in the rest of the section seems likely.

The most nearly allied species is undoubtedly *L. angustifolium* Michx., but in the rather numerous synonymy of that somewhat polymorphous species I find nothing to indicate that the plant now under consideration has ever been included. This will be distinguished at once from that by the harsh pubescence, the root character, the non-punctate nutlets and its habitat. Though collected but once it was observed carefully in its locality where it was abundant: found only on abrupt, shelving slopes of sandstone. Type, no. 4737, Point of Rocks, June 13, 1898.

Castilleia chromosa

Stems usually numerous, clustered on the crown (or crowns) of a woody root, simple or sparingly branched, ascending or erect with somewhat decumbent base, 2-4 dm. long: pubescence of two kinds, a fine puberulence and more or less of whitish, crisped hairs; leaves variable; the lower entire or nearly so, lanceolate to linear, 3-7 cm. long; the upper pinnatifid, consisting of a lanceolate blade proper, 3-5 cm. long, and 2-4 linear to lanceolate, widely divaricate or ascending lobes; the lobes subacute, somewhat paired, the upper pair short, the lower about equaling in length the blade proper: inflorescence at first short and dense, at length more open-spicate, 10-15 cm. long, more densely crisped-hairy than the rest of the plant: bracts somewhat similar to the upper leaves, the lobes less divaricate, about equaling the corolla, from scarlet to yellowish-red: calyx about 20 mm. long, about equally cleft before and behind, the tube about twice as long as the bifid lobes: corolla more or less exserted, sometimes one fourth exceeding the calyx, the galea a little longer than the tube, the lip very short and almost truncate, three narrow plicae extending from its margin nearly one third the length of the tube.

At first I was inclined to think this merely a form of *C. angustifolia* Don. but after careful study of all the material at hand in the light of Mr. Fernald's excellent presentation of this and the allied species* I feel satisfied of the perfect distinctness of *C. chromosa*. I am even inclined to think that *C. angustifolia* will be found to belong to a range considerably to the northwest of this.

* *Erythraea*, 6: 41.

C. chromosa is widely distributed in the desert region of south-central Wyoming and several collections of it show no remarkable variation. The following are some of the collections of it: Leroy, Uinta Co., no. 4577, June 7, 1898; Green River, Sweetwater Co., no. 4721, June 14, 1898; Ft. Steele, Carbon Co., no. 5380, June 18, 1898.

***Erigeron pinnatisectus* (Gray)**

E. compositus pinnatisectus Gray, Proc. Am. Acad., 16: 90.

To regard this longer as a variety of *E. compositus* is simply to keep up a cumbersome nomenclature that is neither necessary nor justified by the plant. There are sufficient forms that must of necessity be held as varieties of that species, without including a form so decidedly at variance with the others. *E. pinnatisectus* in its comparatively simple root-system; its fewer, glabrate leaves and stems; its pinnately dissected leaves, and its numerous, long, purple rays is strongly in contrast with the tufted, compact habit; the trifid or multifid leaves; the rather conspicuous pubescence, and the white rays of the other.

E. pinnatisectus mostly occurs at higher altitudes than *E. compositus* and consequently is less frequently collected but, nevertheless, it is fairly well represented in the herbaria. Professor C. S. Crandall's specimens from the head waters of Beaver Creek, Colo., and the writer's no. 1816, LaPlata Mines, Medicine Bow Mountains, well illustrate it.

Erigeron melanocephalus

E. uniflorus L. of most American authors, in part; *E. simplex* Greene, Fl. Fran. 387, in part (?); *E. uniflorus melanocephalus* Aven Nelson, First Rep. Fl. Wyo. 131 and 206.

Main root woody, more or less branched, giving rise to numerous fibrous ones: caudex thick and nearly simple or more or less branched, the branches short: stems few to several (often 10 or more), slender, erect, 5-15 cm. high, monocephalous, pubescent with purplish hairs: leaves numerous on the crowns, nearly sessile to long-petioled, blade elliptic to narrowly oblong, 2-5 cm. long (including the petiole), almost glabrous; stem leaves several, broadly linear, acuminate, 2-3 cm. long, pubescence similar to that of the stem: heads large, when fully expanded 3 cm. broad: involucral bracts involved in a dense, dark-purple wool, the hairs of which consist of purple and transparent cells alternately ar-

ranged: rays 50–60, white or barely pinkish: disk flowers very numerous, all of them perfect.

By separating the American forms from the Old World *E. uniflorus*, Dr. Greene has simplified the study of the American species. It seems to me that *E. simplex* is still an aggregate. As characterized by Dr. Greene, "Stem solitary, simple, involucre densely villous-hirsute," the form now proposed as a species is excluded. *E. melanocephalus* shows a constant tendency to a caespitose habit and several stems: its dark, almost black, involucre is strongly in contrast to the light colored ones of *E. simplex*. The fact that the very numerous florets of the disk are all perfect seems also to be in disagreement with *E. simplex*, as it is most frequently described. Both species occur in the Rockies but the latter has the wider range and is, I believe, alpine while *E. melanocephalus* is mostly alpestrine, occurring in the small, grassy parks below or near the timber line. Undoubtedly many of the collections from the Rockies belong to this species. Our numbers, 1772 and 5180 from the LaPlata Mines, Medicine Bow Mountains well illustrate it.

Erigeron Engelmanni

Root single, short, tapering rapidly, woody, more or less branched below: crown woody, from nearly simple to numerous but very short branched: leaves very numerous, crowded on the crowns, linear, on very slender petioles which about equal the blade, closely sub-cinereous, somewhat ciliolate on the petioles, from 2–6 cm. long (including the petioles): stems weak, decumbent or prostrate, moderately leafy, pubescence similar to that of the leaves, 3–6 cm. long, monocephalous or with 2 or 3 heads: peduncles short, ascending, 1 or more bracted: heads rather small, involucre about 5 mm. high, its bracts equal, in two series, narrowly linear, acuminate, dark green with light margins, ciliolate: rays white, broadly linear, 40 (more or less), the ligules about 5 mm. long, equal: achene small, obscurely pubescent.

In looking through the "inquirendi" sheet of *Erigeron* in Herb. Mo. Bot. Garden, I found just one specimen of this plant collected by Dr. Geo. E. Engelmann, June 26, 1880, at Evans-ton, Wyo. My no. 5389, which I cite as type, is from the same locality, June 19, 1898, and is a perfect duplicate of Engelmann's. The habitat of this species seems to be the stony slopes of the foothills where each plant forms a flat, spreading mat among the stones. Its affinities, I should think, are with *E. Eatoni*.

Erigeron inamoenus

Caespitose, the roots numerous, one or more short tap-roots and many fibrous ones: caudex of few to many short crowded branches: leaves numerous, fascicled on the crowns, linear-spatulate, pubescent with short, stiffish hairs, 2-4 cm. long, including the slender, ciliolate petiole which is nearly twice the length of the blade: stems scapose, pubescent, 5-10 cm. long, the 3-5 basal leaves not apparent as they are concealed by the similar fascicled ones of the crowns, a single bract on the monocephalous peduncles: involucre broad-campanulate, about 6 mm. high, ciliolate-pubescent; bracts linear, acuminate, with a dark green midrib and scarious margins: rays purple, 25 more or less, broadly linear to oblong, the ligule 7-10 mm. long, the tube short: pappus bristles slender, in one series, about equal: achenes pubescent.

A beautiful species with a very characteristic root system and large (for the plant) handsome heads of flowers. Secured but once, when it was found in the greatest profusion, literally carpeting the whole rounded summits of low hills otherwise destitute of vegetation. The soil (?) was a red clay and pebbles as large as birds' eggs, mostly pebbles. Type specimen in Herb. University of Wyoming, no. 4680, Kemerer, June 13, 1898.

Erigeron Wyomingensis

Root nearly simple, woody: caudex multicapital, the branches very short and crowded, covered with dead leaf-bases: stems simple, numerous, one to several from each crown, rather closely pubescent with spreading unequal hairs, leafy below, naked-pedunculate above, 7-15 cm. long: leaves crowded on the crowns, short hirsute all over, the margins strongly hirsute-ciliate especially on the petioles, linear-spatulate, on petioles exceeding the blades, 3-5 cm. long (including petiole): stem leaves several, similar but becoming smaller upward: peduncles naked or with a filiform bract, monocephalous: heads large, including the spreading rays 20-25 mm. broad: involucral bracts narrow, in two rows, hirsute, long acuminate, with a dark green midrib, half as long as the rays: rays purple, 40-70, pappus of sparse, slender bristles, equaling the numerous disk corollas and a close ring of short, unequal, paleae-like hairs: achene pubescent, glabrate at maturity, oblong-spatulate, 2-3 mm. long.

This species has much the habit and pubescence of *E. pumilus* Nutt. but its smaller size, simple, less leafy stems, long peduncled heads and purple rays at once distinguish it.

It is also to be compared to *E. condensatus* (Eaton) Greene, under which name some specimens were recently distributed, no. 3088, Point of Rocks, June 1, 1897. That is, however, a plant of a more southwestern range and seems to be a smaller plant, with shorter leaves, more coarsely hirsute, light colored rays and a very different pappus.

E. Wyomingensis I have seen so far from this state only. It occurs rather sparingly in the south-central portion of the state, on dry gravelly hillsides. Collected in 1898 also. Type in Herb. University of Wyoming, no. 3088.

WYOMINGIA

Perennials with woody, more or less branched roots and short, woody, caespitose, multicapital caudices whose branches are roughened or sheathed by the bases of the leaves of the previous years: stems simple, monocephalous, one or more from each crown, becoming naked and pedunculate above: leaves crowded on the crowns and on the bases of the stems: heads large, involucre bracts in 3-4 successively shorter rows, rigid with a thickened midrib: flowers Aster-like, rays broad, comparatively few, disk-flowers numerous: style appendages short, triangular-cuspidate: achenes short, densely pubescent, subterete.

***Wyomingia pulcherrima* (Heller)**

Erigeron pulcherrimus Heller, Bull. Torr. Bot. Club, **25**: 200, pl. 304.

Mr. Heller's plant as the first published of the species upon which the genus now proposed as new is founded, may stand first. His species and the one collected by the writer (described below) are, so far as known at present, the only members of the genus. It may turn out, however, that with these are to be associated one or two others among which may be named *Erigeron Montanensis* Rydb.

The generic description is drawn in particular from the following species, though an examination of Mr. Heller's plant leaves no doubt whatever that the two are closely congeneric. To place these plants in the already diverse genus *Erigeron* would be very unsatisfactory as the characters show.

The root and caudex systems are those of *Xylorrhiza* and the broad rays also suggest that genus. *Wyomingia* is further to be dis-

tinguished from *Erigeron* by its multiserial involucre and the thickened rigid bracts ; by the short, strongly pubescent achenes, which are scarcely flattened, and by its uniserial pappus. I had thought to call the genus *Helleria* in honor of that indefatigable collector, A. A. Heller, but that name being preoccupied I call it *Wyomingia* in honor of my own state.

Wyomingia cinerea

Characters of the genus : stems erect, fascicled, somewhat striate with yellowish-green lines (possibly a generic distinction), about 2 dm. high, the upper part naked, pedunculate, usually with a single bract : leaves linear or some of the crown leaves spatulate, acute, cinereous (as are also the stems) with a short, close, appressed pubescence : heads large, when fully open, 3 cm. or more across : involucre broadly hemispherical, about 1 cm. high, its bracts acute, cinereous with a spreading, crinkled pubescence ; rays 30 (more or less), 5-7-nerved, white or pinkish, the tube finely pubescent as are also the disk florets, 3 mm. broad, 3-toothed at the rounded apex : pappus tawny, in a single series, about as long as the disk corollas, the bristles mostly abruptly flexed $\frac{1}{3}$ their length below the apex : achene short, striately marked with 2-4 greenish-yellow lines, densely pubescent : receptacle flat, alveolate.

A handsome species and certainly rare. Collected on sterile, gravelly hillsides in the Platte River bluffs, near Ft. Steele, June 18, 1898, no. 4828. Very similar and probably the same as this is Professor C. S. Crandall's specimens from Grand Junction, Colo., distributed as *Erigeron argentatus* Gray. Type in Herb. University of Wyoming.